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EXAMINER	
MCLEAN, NEIL R	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/733,045	GREEFF ET AL.	
	Examiner	Art Unit	
	Neil R. McLean	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/11/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/19/2004;5/17/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-12 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 1 and 30 recites the limitation "device" in lines 1,3,4,6,7, and 13 for Claim 1 and lines 1,3,4,6, and 12 for Claim 30. There is insufficient antecedent basis for this limitation in the claim.

It is not clear which device applicant is referring to. The examiner has taken the first device mentioned to be the 'host computer' and the second device mentioned to be the 'printer'.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 8-12, 25-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Hines (US 6,392,758).

Regarding Claim 1:

A method of controlling rendering (Column 6, lines 7-18) by a device comprising:

a) providing at least a half duplex or better bi-directional communications (Column 6, lines 19-22;) path between a client (Column 8, lines 30-32) and a rendering device (110 in Figure 2).

said device including resources for storing data (Column 6, lines 23-31;108 in Figure 2) and rendering an image based on data (Image Data 120 in Figure 2) sent to the device by the client through the bi-directional communications path (Bi-Directional Path shown in Figure 2); and

b) co-ordinating rendering by the device (Bi-Directional Printer 110 in Figure 2) by:

i) sending an initial request for services (Column 8, lines 32-34) relating to a job to said device that indicates characteristics of said job;

ii) acknowledging the initial request and requesting rendering data to be sent (Column 8, lines 34-36); and

iii) in response to the request for rendering data (Column 8, lines 36-38), sending rendering data (Column 8, lines 45-48) and awaiting additional requests for more data or in the event all data of a job has been sent to the rendering device awaiting an indication that rendering of said job has been completed (Column 2, lines 51-53).

Regarding Claim 2:

The method of claim 1 wherein the characteristics sent with the initial request includes an amount of data for the job (Column 10, 35-47).

Regarding Claim 3:

The method of claim 1 wherein the initial request indicates that an amount of data in the job is not known (Column 15, lines 15-29; Note: The write thread operates simultaneously with, but independently from the spooler thread when the spooler continues to generate and send data).

Regarding Claim 4:

The method of claim 1 and wherein the data sent to the device includes a data unavailable indicator which indicates to the device data for said job is presently not available and further including a timeout during which the device suspends processing of said job until the data becomes available (Column 2, lines 8-10).

Regarding Claim 5:

The method of claim 1 wherein the client sends data to the rendering device when said data is made available to said client and wherein the rendering device awaits receipt of more data or an end of data indicator (Column 2, lines 50-57).

Regarding Claim 6:

The method of claim 1 wherein the device discards data already sent to the device to accommodate additional data from the print client (Column 14, lines 56-65).

Regarding Claim 8:

The method of claim 1 wherein the rendering device is a printer and the data is organized into pages by the client and wherein the requests for data sent by the printer to the client fulfills the needs for printing one or more pages (Column 10, line 57-Column 11, lines 2).

Regarding Claim 9:

The method of claim 8 wherein the initial request includes an amount of data in the job and wherein in the event the printer determines from the initial request sent by the client that it has enough resources to handle an entire document, the printer requests a transfer data for printing an entire document (Column 10, line 57-Column 11, lines 2).

Regarding Claim 10:

The method of claim 1 wherein the rendering device is a printer and said printer comprises a memory which stores document resources or a part of a document resource and wherein the printer maintains a hit cache and deletes resources from the cache when that have not been recently used when new resources are added to the cache (Column 11, lines 46-52).

Regarding Claim 11:

The method of claim 10 wherein the printer first checks the cache when it needs to issue a request for a resource (Column 11, lines 46-52).

Regarding Claim 12:

The method of claim 1 wherein asking for rendering data in response to the initial request is performed either substantially immediately or after a delay due to utilization of resources for rendering of data from other clients (Column 10, lines 58-66).

Regarding Claim 25:

Hines teaches a system for printing documents comprising:

a) a client (106 in Figure 1) for formatting print data (120 in Figure 2) into pages for transmission (Column 7, lines 11-16);

b) a printer (110 in figures 1 and 2) for receipt of the print data from the client and for rendering an image based on the print data (Column 8, lines 47-48);

c) a communication channel (e.g., Column 6, lines 19-23) for providing at least half duplex or better bi-directional communications path (112 in Figure 1) between a client and the printer;

said printer including print resources for storing print data (Column 3, lines 61-67; Note: It is inherent that the printer in the invention of Hines has some memory/RAM in order for the multithreading process as described by Hines to be able to send e.g., "an

arbitrary packet of data which varies in size from several kilobytes to several megabytes." Column 9, lines 44-46) and rendering an image based on data sent to the printer by the client through the bi-directional communications path; and

d) components included in the printer or the client (Figure 2) for co-ordinating image rendering by the printer by:

i) sending an initial request for services (Column 8, lines 32-34) relating to a job to said printer that indicates characteristics of said job;

ii) acknowledging the initial request and requesting print data to be sent (Column 8, lines 34-36); and

iii) in response to the request for print data (Column 8, lines 36-38), sending print data (Column 8, lines 45-48) and awaiting additional requests for more data or in the event all data of a job has been sent to the printer awaiting an indication that printing of said job has been completed (Column 2, lines 51-53).

Regarding Claim 27:

The system of claim 25 wherein the printer includes resources for storing print data to avoid repeated requests for print data from the print client (Column 3, lines 61-67; Note: It is inherent that the printer in the invention of Hines has some memory/RAM in order for the multithreading process as described by Hines to be able to send e.g., "an arbitrary packet of data which varies in size from several kilobytes to several megabytes." Column 9, lines 44-46).

Regarding Claim 28:

The system of claim 25 wherein the printer comprises a memory which caches document resources or a part of a document resource and wherein the printer includes a computation device that maintains a hit cache and deletes resources from the cache when that have not been recently used when new resources are added to the cache (Column 11, lines 46-52).

Regarding Claim 29:

The system of claim 28 wherein computation device of the printer first checks the cache when it needs to issue a request for a resource (Column 11, lines 46-52).

Regarding Claim 30:

Apparatus for controlling rendering by a device comprising:

a) means for providing at least half duplex or better bi-directional communications path between a client and a device (Column 8, lines 63-65);

said device including resources for storing data (Column 3, lines 61-67; Note: It is inherent that the printer in the invention of Hines has some memory/RAM in order for the multithreading process as described by Hines to be able to send e.g., "an arbitrary packet of data which varies in size from several kilobytes to several megabytes." Column 9, lines 44-46) and rendering an image based on data sent to the device by the client through the bi-directional communications path; and

b) means for co-ordinating rendering by the device by:

i) sending a initial request for services (Column 8, lines 32-34) relating to a job to said device that indicates characteristics of said job;

ii) acknowledging the initial request and requesting rendering data to be sent (Column 8, lines 34-36); and

iii) in response to the request for rendering data, sending rendering data and awaiting additional requests for more data or in the event all data of a job has been sent to the rendering device awaiting an indication that rendering of said job has been completed (Column 2, lines 51-53).

Regarding Claim 31:

A computer readable medium containing instructions for controlling printing by a printer comprising:

a) implementing a half duplex or better bi-directional communications connection (The program code or device which performs the function described in Column 6, lines 19-22) between a client and a printer that includes resources for storing data and rendering an image based on data sent to the printer by the client through the bi-directional communications path; and

b) co-ordinating printing by the printer (The program code or device which enables the) by:

i) sending an initial request for services relating to a job to said printer that indicates characteristics of a print job (The program code or device which performs the function described in Column 8, lines 32-34);

ii) acknowledging the initial request and requesting rendering data to be sent (Column 8, lines 34-36); and

iii) in response to the request for rendering data (Column 8, lines 36-38), sending rendering data and awaiting additional requests for more data or in the event all data of a print job has been sent to the printer awaiting an indication that rendering of said print job has been completed (Column 2, lines 51-53).

Claim Rejections - 35 USC § 103

5. following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (US 6,392,758) in further view of Maruyama (US7,227,660).

Regarding Claim 7:

Hines discloses all of the limitations as described in Claims 1-5 above, except Hines does not teach the retransmission of data that was previously discarded during rendering of the job for subsequent use in rendering.

However, Maruyama, in the same field of endeavor teaches a retransmitting means operable in case of a failure of transmission (Column 2, lines 32-41).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Hines to be able to retransmit data in the event that the data was discarded.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Hines. The suggestion/motivation for doing so would be because it would be advantageous to have the option to retransmit data, in the event of a data loss or the user just decides that they have changed their mind and wish to send something that they had previously discarded.

5. Claims 13-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (US 6,392,758) in view of Perkins and Harjono, "Resource Discovery Protocol for Mobile Computing", 1996.

Regarding Claim 13:

Hines teaches a process for controlling printing of a print job by a printer comprising:

sending a print job request from a client to the printer (Column 8, lines 32-34), said request comprising:

a type of document or documents that make up the print job (Column 10, lines 53-56);

printer settings to apply to the document or documents (Column 1, lines 42-58); metadata concerning the document or documents (Column 10, lines 53-56); and a printer timeout (Column 2, lines 8-10).;

replying to the request with an initial response that indicates if the document print request can be accepted (Column 8, lines 34-36) and if it is accepted, submitting a data request for document data at the source address;

transmitting the requested document data to the printer (The program code or device which performs the function described in Column 8, lines 32-34); and

Hines does not teach a unique source identifier for the job, a source address where a plurality of document resources can be retrieved and supplying a printer identifier for the print job on the printer for use by the client to subsequently identify the print job on the printer.

However, Perkins and Harjono, in the same field of endeavor of rendering images teaches an RDP database and query and response system which includes the registration of network resources, including the url of such resources (pp450, Section 2.6, lines 15-35).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Hines to use an identification method that includes the url of printers and other resourses.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Hines. The suggestion/motivation for doing so would be to allow negotiations for resources to be faster. And since the protocol

transactions in RDP are designed to use less memory, and computational loads at the server, fewer decisions regarding query format and code structure need to be decided upon.

Regarding Claim14:

The process of claim 13 wherein the metadata includes a size and type of the document or documents (Column 10, lines 53-56).

Regarding Claim 15:

The process of claim 13 wherein the data request includes an offset into a collection of resource data (Column 10, lines 53-56).

Regarding Claim 16:

The process of claim 15 wherein the collection of resource data is a glyph or a range of glyphs (Column 10, lines 53-56).

Regarding Claim 17:

The process of claim 13 wherein the resource contains a picture or a font and wherein the printer issues a new request to retrieve the data for the font or picture (Column 10, lines 44-47).

Regarding Claim 18:

The process of claim 13 wherein the printer formats a page at a time and after each page the printer issues a request to retrieve data for the next page (Column 10, line 57-Column 11, lines 2).

Regarding Claim 19:

The process of claim 13 wherein request for print resources are repeated until an entire job has been printed (Column 10, line 57-Column 11, lines 2).

Regarding Claim 20:

The process of claim 13 wherein the printer sends the client a message that indicates that the job has been completed (Column 2, lines 11-19).

Regarding Claim 21:

The process of claim 13 wherein the print job request indicates a streaming mode wherein data is sent from the client to the printer as it becomes available to the client once the printer has accepted the print job (Column 10, line 57-Column 11, lines 2).

Regarding Claim 22:

The process of claim 13 wherein the initial request indicates that an amount of data in the job is not known (Column 11, lines 46-52; See Figure 6).

Regarding Claim 23:

The process of claim 13 and wherein the data sent to the printer includes a data unavailable indicator which indicates to the printer data for said job is presently not available and further including a timeout during which the device suspends processing of said job until the data becomes available (Column 14, lines 8-10).

Regarding Claim 24:

The method of claim 13 wherein the client sends data to the printer when said data is made available to said client and wherein the printer awaits receipt of more data or an end of data indicator (Column 2, lines 50-57).

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (US 6,392,758) in further view of well known prior art.

Regarding Claim 26:

Hines teaches the system of claim 25 wherein the printer comprises a page memory for storing a page of data (Column 10, line 57-Column 11, lines 2).

However Hines does not expressly disclose using a print head.

However it is well known in the art that some printers, particularly inkjet printers use cartridges with the print head attached.

(Official Notice)

At the time of the invention it would have been obvious to one of ordinary skill in the art to use a print head in a printing device.

The suggestion/motivation for doing so would be because an inkjet printer is a very common type of computer printer due to their low cost, high quality of output, capability of printing in color and ease of use.

Therefore, it would have been obvious to combine a print head with the printing system of Hines to obtain the invention of Claim 25.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ross et al. (US 5,644,683) teaches An improved print mode and system for alleviating wait-banding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. McLean whose telephone number is 571. 270.1679. The examiner can normally be reached on Monday through Friday 7:30AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571.272.7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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08/20/2007

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